Division of Neuroscience (DN)

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The official link for this solicitation is: http://grants.nih.gov/grants/guide/pa-files/PA-12-088.html

Agency:
Department of Health and Human Services

Release Date:
January 31, 2012
Branch:
n/a

Open Date:
January 31, 2012
Program / Phase / Year:
SBIR / Phase I / 2012

Application Due Date:
January 08, 2013

Solicitation:
PA-12-088

Close Date:
January 08, 2013
Topic Number:
2.4

Description:

DN supports research on age-related changes in the brain or nervous system in the context of other age-related physiological or homeostatic regulator changes (e.g., endocrine, dietary, sleep and circadian rhythms, immune, disease states); degenerative processes or pathological changes in the aging brain in the context of understanding normal age-related changes; and the sensory, motor, perceptual and cognitive processes and changes that occur with aging as related to their underlying biological mechanisms.

An important component of DN is the support of studies on Mild Cognitive Impairment (MCI), Alzheimer's disease (AD), and other dementias of aging such as Frontotemporal Dementia, Lewy Body Dementia, and Vascular Dementia.

Areas that may be of interest to small businesses include, but are not limited to:

A. Development of sensitive, specific and standardized tests for diagnostic screening of cognitive decline and dementia; for example, the development of novel neuropsychological, biochemical and neuroimaging methods for the early detection of cognitive decline and MCI and the early diagnosis of AD.

Dr. John Hsiao

301-496-9350; Fax: 301-496-1494

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or

Dr. Nina Silverberg (neuropsychological detection methods)

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B. Discovery, development, and/or evaluation of drugs, biological or natural products, including central-nervous-system delivery systems, to enhance cognitive functioning in normal aging and to treat the cognitive deterioration and/or behavioral symptoms associated with MCI, AD, and other dementias of aging as well as to slow and/or reverse the course of the disease or to prevent it entirely.

Dr. Neil Buckholtz (MCI, AD, & other dementias of aging)

301-496-9350, Fax: 301-496-1494

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and

Dr. Suzana Petanceska (MCI, AD, & other dementias of aging)

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and

Dr. Molly Wagster (Cognitive functioning in normal aging)

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The development of practical applications using innovative technologies (e.g. hand-held, internet, telemedicine GPS, robotics, social networking and communications technologies) to support and improve quality of life, well-being, and the ability of people with MCI, AD or other dementias of aging to live independently and safely at home for an extended period of time. Examples include systems and devices to: evaluate, monitor and improve or adapt to changes in cognition; improve health service delivery; support independent living and the conduct of everyday tasks at home; provide information to health care providers and family members with which to evaluate the need for intervention; and promote

communication and interaction between individuals living in the community or in institutional settings and their health care providers, friends and family members.

Dr. Nina Silverberg

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C. Testing in clinical trials of drug, nutritional, behavioral, cognitive or other types of interventions to enhance cognitive functioning in normal aging and to treat cognitive deterioration and/or behavioral symptoms associated with MCI, AD, and other dementias of aging as well as to slow and/or reverse the course of disease or to prevent the onset of disease.

Dr. Laurie Ryan (MCI, AD, & other dementias of aging)

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Dr. Molly Wagster (Cognitive functioning in normal aging)

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D. Devices or intervention strategies that may prolong functional independence when there are dysfunctions of the central nervous system.

E. Behavioral, environmental, pharmacological, & nutritional interventions to prevent and/or remediate brain biochemical and/or neurophysiological changes caused by normal aging and neurodegenerative diseases, including age-related sensory dysfunction (e.g., pain, hearing loss, speech communication disorders, olfaction loss, & vision loss), motor dysfunctions (including Parkinson's disease & other age-related psychomotor disorders) or age-related decrements in balance & postural control, gait performance, and mobility.

F. Biosensors and prosthetic devices, technologies, and related software development to aid in the assessment, diagnosis, and remediation of age-related cognitive decline or sensory dysfunction (including pain), motor dysfunction (including Parkinson's disease and other motor disorders of aging), or age-related changes in balance, postural control, and gait. Novel markers of normal age-dependent cognitivedecline or sensory and/or motor system changes at the molecular cellular, circuitry, physiological or behavioral level in humans or relevant animal models.

Dr. Wen G. Chen

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or

Dr. Molly Wagster

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G. New technologies to screen for the presence of sleep disorders in older persons, to aid in the diagnosis of these disorders, and to enable their remediation.

H. Minimally invasive technologies to detect prion diseases early in the course of the disease process in older adults, as well as effective treatment strategies to slow, halt or prevent these diseases.

Dr. Miroslaw Mackiewicz

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I. Improved instrumentation, imaging technology, related devices, and software packages for use

in visualizing neural activity during cognitive or sensory behavior in older adults. Also of interest would be new technologies to combine neural imaging and behavioral assessment in awake animals.

Dr. Molly Wagster

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J. Development of technology and analysis tools to examine cellular patterns of gene and protein expression in the normal and diseased aging nervous system, including the identification of aberrant gene products expressed in the aging brain. Development of molecular imaging technology for the *in vitro* and *in vivo* analysis of gene and protein function in the normal aging brain and in the diseased aging nervous system.

K. Development of technology, including non-invasive methods and novel probes, to monitor and manipulate the plasticity of neural circuits in the adult and aged nervous system. Development of novel markers of neural stem cell function (proliferation, migration, and differentiation) as well as methods to assess the integration and function of stem cells in the nervous system.

Dr. Brad Wise (Normal brain aging)

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and

Dr. Lawrence Refolo (Alzheimer's disease & other dementias of aging)

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